

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior version, and listings, of claims in the application. Where claims have been amended and/or canceled, such amendments and/or cancellations are done without prejudice and/or waiver and/or disclaimer to the claimed and/or disclosed subject matter, and the applicant and/or assignee reserves the right to claim this subject matter and/or other disclosed subject matter in a continuing application.

LISTING OF CLAIMS:

What is claimed is:

1. (Original) A method of enhancing scan resolution, suitable for use in a scanner with an optical sensor, wherein a range that a detecting cell of the optical sensor can detect includes a plurality of original pixels with a predetermined number, and a result of one detection by the detecting cell is called a scanned pixel, the method comprising:

scanning a smooth image region, wherein the smooth image region includes at least the original pixels with the predetermined number and has a uniform brightness, to obtain a smooth image data;
and

processing scanned images obtained by scanning a document according to the smooth image data.

2. (Original) The method according to claim 1, wherein the smooth image data is obtained prior to scanning the document.

3. (Currently Amended) The method according to claim 2, wherein processing the scanned images obtained by scanning the document further comprises:

obtaining a calculated smooth brightness of the original pixels corresponding to scanned pixels of the smooth image data; and

using a calculated brightness corresponding to the original pixels with the predetermined number minus one in the smooth image region as a standard to calculate the calculated brightness corresponding to original pixels of the document.

4. (Original) The method according to claim 3, wherein when there are original pixels with a pre-pixel number prior to the original pixels to be calculated, calculating the calculated brightness corresponding to the original pixels in the document comprises:

comparing the brightness of the scanned pixel to the brightness of the original pixels with a number equal to the predetermined number minus one prior to the original pixels to be calculated when the pre-pixel number is greater than or equal to the predetermined number minus one, so as to obtain the calculated brightness of the original pixels to be calculated; and

comparing the brightness of the scanned pixels to the brightness of calculated brightness corresponding to the original pixels prior to the original pixels to be calculated, and the smooth calculated brightness of the original pixels with the predetermined number minus the pre-pixel number and minus one when the pre-pixel is smaller than the predetermined number minus one, so as to obtain the calculated brightness of the original pixels to be calculated.

5. (Original) The method according to claim 3, wherein the step of calculating the calculated brightness corresponding to the original pixels in the document includes performing a real time calculation while scanning the document.

6. (Original) The method according to claim 3, wherein calculating the calculated brightness corresponding to the original pixels in the document includes calculating after scanning the document.

7. (Original) The method according to claim 1, wherein the smooth image data is obtained after scanning the document.

8. (Original) The method according to claim 7, wherein obtaining the scanned pixel while scanning the document comprises:

obtaining a calculated smooth brightness of the corresponding original pixels from the scanned pixels of the smooth image data; and

using a corresponding calculated brightness of the original pixel with the predetermined number minus one in the smooth image region as a standard to calculate a calculated brightness corresponding to the original pixels of the document.

9. (Original) The method according to claim 8, wherein when there are original pixels with a pre-pixel number prior to the original pixels to be calculated, calculating the calculated brightness corresponding to the original pixels of the document comprises:

comparing the brightness of the scanned pixel to the brightness of the original pixels with a number equal to the predetermined number minus one prior to the original pixels to be calculated when the pre-pixel number is greater than or equal to the predetermined number minus one, so as to obtain the calculated brightness of the original pixels to be calculated; and

comparing the brightness of the scanned pixels to the brightness of calculated brightness corresponding to the original pixels prior to the original pixels to be calculated, and the smooth calculated brightness of the original pixels with the predetermined number minus the pre-pixel number and minus one when the pre-pixel is smaller than the predetermined number minus one, so as to obtain the calculated brightness of the original pixels to be calculated.

10. (New) A method of enhancing scan resolution, suitable for use in a scanner with an optical sensor, wherein a range that a detecting cell of the optical sensor can detect includes a plurality of original pixels

with a predetermined number, and a result of one detection by the detecting cell is called a scanned pixel, the method comprising:

scanning a smooth image region, wherein the smooth image region includes at least the original pixels with the predetermined number and has a uniform brightness, to obtain a smooth image data; and

processing scanned images obtained by scanning a document according to the smooth image data, further comprising:

obtaining a calculated smooth brightness of the original pixels corresponding to scanned pixels of the smooth image data, and

using a calculated brightness corresponding to the original pixels with the predetermined number minus one in the smooth image region as a standard to calculate the calculated brightness corresponding to original pixels of the document.

11. (New) The method according to claim 10, wherein the smooth image data is obtained prior to scanning the document.

12. (New) The method according to claim 10, wherein when there are original pixels with a pre-pixel number prior to the original pixels to be calculated, calculating the calculated brightness corresponding to the original pixels in the document comprises:

comparing the brightness of the scanned pixel to the brightness of the original pixels with a number equal to the predetermined number minus one prior to the original pixels to be calculated when the pre-pixel number is greater than or equal to the predetermined number minus one, so as to obtain the calculated brightness of the original pixels to be calculated; and

comparing the brightness of the scanned pixels to the brightness of calculated brightness corresponding to the original pixels prior to the original pixels to be calculated, and the smooth calculated brightness of the original pixels with the predetermined number minus the pre-pixel number and minus one when the pre-pixel is smaller than the predetermined number minus one, so as to obtain the calculated brightness of the original pixels to be calculated.

13. (New) The method according to claim 10, wherein the step of calculating the calculated brightness corresponding to the original pixels in the document includes performing a real time calculation while scanning the document.

14. (New) The method according to claim 10, wherein calculating the calculated brightness corresponding to the original pixels in the document includes calculating after scanning the document.

15. (New) The method according to claim 10, wherein the smooth image data is obtained after scanning the document.

16. (New) A method comprising:

scanning a smooth image region with a uniform brightness;

obtaining a standard brightness from the smooth image region; and

determining a calculated brightness for at least a portion of a second image region based at least in part on the standard brightness.

17. (New) The method according to claim 16, wherein the second image region includes at least a portion with a non-uniform brightness.

18. (New) The method according to claim 16, wherein the scanning of the smooth image region with a uniform brightness is performed prior to scanning the second image region.

19. (New) The method according to claim 16, wherein the scanning of the smooth image region with a uniform brightness is performed after scanning the second image region.